Learning by teaching

From Wikipedia, the free encyclopedia

In professional education, **learning by teaching** (German: *Lernen durch Lehren*, short **LdL**) designates currently the method by Jean-Pol Martin that allows pupils and students to prepare and to teach lessons, or parts of lessons. Learning by teaching should not be confused with presentations or lectures by students, as students not only convey a certain content, but also choose their own methods and didactic approaches in teaching classmates that subject. Neither should it be confused with tutoring, because the teacher has intensive control of, and gives support for, the learning process in learning by teaching as against other methods. 2016 Weng/Pfeiffer emphazises Martin as "a precursor of the frequently mentioned 'shift from teaching to learning'" [1]

Contents

History

Seneca the Younger told in his letters to Lucilius that we are learning if we teach (epistulae morales I, 7, 8): *docendo discimus* (lat.: "by teaching we are learning"). At all times in the history of schooling there have been phases where students were mobilized to teach their peers. Frequently, this was to reduce the number of teachers needed, so one teacher could instruct 200 students. However, since the end of the 19th century, a number of didactic-pedagogic reasons for student teaching have been put forward.

Students as teachers in order to spare teachers

In 1795 the Scotsman Andrew Bell[2] wrote a book about the mutual teaching method that he observed and used himself in Madras. The Londoner Joseph Lancaster picked up this idea and implemented it in his schools. This method was introduced 1815 in France in the "écoles mutuelles", because of the increasing number of students who had to be trained and the lack of teachers. After the French revolution of 1830, 2,000 "écoles mutuelles" were registered in France. Due to a political change in the French administration, the number of écoles mutuelles shrank rapidly and these schools were marginalized. It is important to stress that the learning level in the Bell-Lancaster-schools was very low. In hindsight, the low level can probably be attributed to the fact that the teaching-process was delegated entirely to the tutors and that the teachers did not supervise and support the teaching process.

Students as teachers in order to improve the learning-process

The first attempts using the learning by teaching method in order to improve learning were started at the end of the 19th century.



Student teaching vocabulary

Selective descriptions and researches

Systematic research – though initially only descriptive – began in the middle of the 20th century. For instance Gartner 1971[3] in the US, in Germany Krüger 1975,[4] Wolfgang Steining 1985,[5] Udo Kettwig 1986,[6] Theodor F. Klassen 1988,[7] Ursula Drews 1997[8] and A. Renkl 1997[9]

LdL as a comprehensive method

The method received broader recognition starting in the early eighties, when Jean-Pol Martin developed the concept systematically for the teaching of French as a foreign language and gave it a theoretical background in numerous publications.[10] In 1987 he founded a network of more than a thousand teachers that employed learning by teaching (the specific name: LdL = "Lernen durch Lehren") in many different subjects, documented its successes and approaches and presented their findings in various teacher training sessions.[11] From 2001 on LdL has gained more and more supporters as a result of educational reform movements started throughout Germany.

By Martin (LdL)

LdL by Martin consists of two components: a general anthropological one and a subject-related one.

- The **anthropological basis** of LdL is related to the pyramid or hierarchy of needs introduced by Abraham Maslow, which consists, from base to peak, of 1) physiological needs, 2) safety/security, 3) social/love/belonging, 4) esteem/self-confidence and 5) being/growth through self-actualization and self-transcendence. Personal growth moves upward through hierarchy, whereas regressive forces tend to push downward. The act of successful learning, preparation and teaching of others contributes to items 3 through 5 above. Facing the problems of our world today and in the future, it is essential to mobilize as many intellectual resources as possible, which happens in LdL lessons in a special way. Democratic skills are promoted through the communication and socialization necessary for this shared discovery and construction of knowledge.
- The **subject related component** (in foreign language teaching) of LdL aims to negate the alleged

contradiction between the three main components: automatization of speech-related behavior, teaching of cognitively internalized contents and authentic interaction/communication.

The LdL approach

After intensive preparation by the teacher, students become responsible for their own learning and teaching. The new material is divided into small units and student groups of not more than three people are formed. Each group familiarizes itself with a strictly defined area of new material and gets the assignment to teach the whole group in this area. One important aspect is that LdL should not be confused with a student-as-teacher-centered method. The material should be worked on didactically and methodologically (impulses, social forms, summarizing phases etc.). The teaching students have to make sure their audience has understood their message/topic/grammar points and therefore use different means to do so (e.g. short phases of group or partner exercises, comprehension questions, quizzes etc.).

Building neural network

Martin attempted to transfer the brain structure, especially the operating model from neural networks – to classroom interactions.[12] The activities conducted during the various lessons phases and their consequences are summarized in the following table:[13]

Phases	Students' behavior	Teacher's behavior	Additional comments
Preparation at home	The students work intensively at home, because the quality of the classroom discussion (collective intelligence, emergence) depends closely on the students' ("the neurons") preparation. Students who are not prepared or who are often absent are not able to react to impulses or to "fire off" impulses themselves.	The teacher ("the frontal cortex") has to perfectly master the content because he or she must be able to intervene at any time, completing or giving incentives in order to enhance the quality of classroom discussion	Using LdL means that lesson time will not be used in order to communicate new content but instead for **interaction either in little groups or with the entire class** (collective knowledge constructing). The homework should prepare the students to interact on a high level during the lesson
Interactions during the lesson	The students sit in a circle. Each student listens with concentration to the other students and asks questions if something in the explanations is not clear	The teacher looks for absolute quietness and concentration during the explanations by students, so that each student may explain their thoughts without being interrupted and so that other students may ask questions of the student giving the lesson	Using LdL means that during the presentations and interactions the students have to be **absolutely quiet** so that everybody is able to listen to the students' utterances. During the students' interactions, the teacher has to **back off**

Introduction: information gathering two by two: example "Dom Juan by Molière"	Using "human resources": the students in charge of the course briefly present the new topic and let the other students discuss what is new about this topic (for example about Dom Juan by Molière)	The teacher looks to see if the students really exchange their knowledge	Using LdL means that the students' already existing knowledge about the new topic will be **"inventoried"** in little groups
First deepening: Gathering information in class	The leading students inspire their classmates to interact (they are sitting in circle) as long as all the questions are asked and answered. The students interact like **neurons** in neural networks and thoughts "**emerge**".	The teacher makes sure that each student has the opportunity to participate, and asks questions if something is not clear and needs to be clarified by the class (until the "**emergence**" has reach the desired quality)	The **previous knowledge** from each student is interchanged within the full-classroom discussion and **aligned**, since the new content will be fed in.
Introducing the new content in the classroom (example: "Molière's humor in *Dom Juan*")	The teaching students introduce the new content in small portions to their peers (for example, relevant scenes from Dom Juan) and they repeatedly ask questions in order to check if everything is clear	The teacher observes the communication and intervenes if something is not clear. The teacher continues to let the students clarify what they have said if meaning or content are not completely clear	By LdL the new content is **shared in small portions** and communicated step-by-step in the classroom.
The second deepening: Playing scenes	Led by the teaching students, the relevant scenes will be played and memorized (for example the seduction of the peasant-maid by Don Juan)	The teacher gives input of new ideas, and makes sure that there is adequate and successful scene-playing by the students	In LdL the teacher is a **director** and is not afraid of interrupting if presentations in front of the other students are not expressive enough (**workshop** ambiance).
The third deepening: written homework (text task, interpretation of a place, for instance, Don Juan's discussion with his father)	All pupils work hard at home	The teacher collects all homework and carefully corrects it	In teaching younger grades the LdL tasks are prepared during the lessons themselves. For older grades, the preparation **shifts more and more towards homework** so that a bigger proportion of the teaching time is available for **interactions** (collective reflection) .

Advantages and disadvantages

Most teachers using the method do not apply it in all their classes or all the time. They state the following advantages and disadvantages:

Advantages

- Student work is more motivated, efficient, active and intensive due to lowered inhibitions and an increased sense of purpose
- By eliminating the class division of authoritative teacher and passive audience, an emotive solidarity is obtained.
- Students may perform many routine tasks, otherwise unnecessarily carried out by the instructor
- Next to subject-related knowledge students gain important key qualifications like
  - teamwork
  - planning abilities
  - reliability
  - presentation and moderation skills
  - self-confidence

The development of such transferable skills or 'employability' skills is considered to be an important aspect of learning by teaching approaches.[14][15]

Disadvantages

- The introduction of the method requires a lot of time.
- Students and teachers have to work more than usual.
- There is a danger of simple duplication, repetition or monotony if the teacher does not provide periodic didactic impetus.

Reception of Martin's methods

Martin's work has been well received in teacher training and by practicing teachers: since 1985 more than 100 teacher students in all subjects wrote their ending thesis about LdL. Also the education administration received both the theory and the practice of LdL (vgl.Margret Ruep 1999[16]). In didactics handbooks LdL has been described as an "*extreme form of learner centred teaching*"[17]). On the university level, LdL has been disseminated by Joachim Grzega in Germany, Guido Öbel[18] in Japan and Alina Rachimova[19] in Russia.

Outside the LdL-context

Sudbury schools

Sudbury schools, since 1968, do not segregate students by age, so that students of any age are free to interact with students in other age groups. One effect of this age mixing is that a great deal of the teaching in the school is done by students. Here are some statements about Learning by teaching in the Sudbury Schools:[20]

> "*Kids love to learn from other kids. First of all, it's often easier. The child teacher is closer than the adult to the students' difficulties, having gone through them somewhat more recently. The explanations are usually simpler, better. There's less pressure, less judgment. And there's a huge incentive to learn fast and*

well, to catch up with the mentor.
Kids also love to teach. It gives them a sense of value, of accomplishment. More important, it helps them get a better handle on the material as they teach; they have to sort it out, get it straight. So they struggle with the material until it's crystal clear in their own heads, until it's clear enough for their pupils to understand."

Pupil-Team Learning: The Durrell Studies

In the 1950s Dr. Donald D. Durrell and his colleagues at Boston University pursued similar methods which they named Pupil-Team Learning. A year-long efficacy study in the schools of Dedham, Massachusetts, was published in the Boston University Journal of Education, Vol. 142, December, 1959, entitled "Adapting Instruction to the Learning Needs of Children in the Intermediate Grades" in which one of the authors, Walter J. McHugh, reported significant learning gains from the use of pupil teams.

The Vygotsky Connection

In the 1930s Lev Vygotsky wrote extensively, in Russian, on the profound connection between language and cognition, and in particular oral language (speech) and learning. The implication of Vygotsky's observations for Learning by Teaching would appear to be direct and apt. "The one who does the talking, does the learning" may best summarize the point: students learn by teaching their peers.

See also

- Active learning
- Bell-Lancaster method
- Jigsaw (teaching technique)
- Learning theory (education)
- Flipped classroom

References

Notes

1. Weng, Annegret; Pfeiffer, Anke: „Lernen durch Lehren“ in der Mathematik – Videotutorials und Apps im Praxistest. 2016, 16 S. - URN: urn:nbn:de:0111-pedocs-122641
2. Andrew Bell: *Expériences sur l'éducation faite à l'école des garçons à Madras*, 1798
3. Alan Gartner et al.: *Children teach children. Learning by teaching*. Harper & Row, New York 1971
4. Rudolf Krüger: *Projekt „Lernen durch Lehren“*. Schüler als Tutoren von Mitschülern'.' Klinkhardt, Bad Heilbronn 1975
5. Wolfgang Steinig: *Schüler machen Fremdsprachenunterricht*. Tübingen: Narr.1985
6. Udo Kettwig: *Lernen durch Lehren, ein Plädoyer für lehrendes Lernen*. In: *Die deutsche Schule*, Nr. 4 1986, 474-485
7. Theodor F. Klassen: *Lernen durch Lehren, das Beispiel der Jenaplanschule Ulmbach*. Zeitschrift Pädagogik, Nr. 11 1988, (S. 26-29)
8. Ursula Drews (Hrsg.): *Themenheft: Schüler als Lehrende. PÄDAGOGIK.* 11/49/1997. Beltz-Verlag, Weinheim
9. Alexander Renkl:*Lernen durch Lehren. Zentrale Wirkmechanismen beim kooperativen Lernen.* Deutscher Universitätsverlag: Wiesbaden, 1997.
10. Jean-Pol Martin:*Zum Aufbau didaktischer Teilkompetenzen beim Schüler. Fremdsprachenunterricht auf der lerntheoretischen Basis des Informationsverarbeitungsansatzes*. Dissertation. Tübingen: Narr. 1985; Jean-Pol

Martin: *Vorschlag eines anthropologisch fundierten Curriculums für den Fremdsprachenunterricht*. Habilitation. Tübingen: Narr 1994. Jean-Pol Martin: *Das Projekt „Lernen durch Lehren" - eine vorläufige Bilanz*. In: Henrici/Zöfgen (Hrsg.): *Fremdsprachen Lehren und Lernen (FLuL). Themenschwerpunkt: Innovativ-alternative Methoden*. 25. Jahrgang (1996). Tübingen: Narr, S. 70-86 (PDF; 0,2 MB (http://www.ldl.de/material/aufsatz/flul.pdf)), Jean-Pol Martin (2002a): *Weltverbesserungskompetenz als Lernziel?* In: Pädagogisches Handeln – Wissenschaft und Praxis im Dialog, 6. Jahrgang, 2002, Heft 1, S. 71-76 (PDF (http://www.ldl.de/material/aufsatz/aufsatz2002-2.pdf))

11. Jean-Pol Martin (1989): *Kontaktnetz: ein Fortbildungskonzept*, in: Eberhard Kleinschmidt,E.(Hrsg.), *Fremdsprachenunterricht zwischen Fremdsprachenpolitik und Praxis: Festschrift für Herbert Christ zum 60. Geburtstag*, Tübingen. 389-400, (PDF 62 KB) (http://www.ldl.de/material/aufsatz/konnetz.pdf)
12. Jean-Pol Martin (2004)in: *Treibhäuser der Zukunft - Wie in Deutschland Schulen gelingen. Eine Dokumentation von Reinhard Kahl und der Deutschen Kinder- und Jugendstiftung*. ISBN 3-407-85830-2 (BELTZ), DVD 3
13. Jean-Pol Martin, Guido Oebel (2007): *Lernen durch Lehren: Paradigmenwechsel in der Didaktik?*, In: *Deutschunterricht in Japan*, 12, 2007, 4-21 (Zeitschrift des Japanischen Lehrerverbandes, ISSN 1342-6575)
14. Stollhans, Sascha. (2016). Learning by teaching: developing transferable skills. (http://dx.doi.org/10.14705/rpnet.2016.cbg2016.478) In Erika Corradini, Kate Borthwick, Angela Gallagher-Brett (Eds), Employability for languages: a handbook (pp. 161-164). Dublin, Ireland: Research-publishing.net (http://Research-publishing.net). http://dx.doi.org/10.14705/rpnet.2016.cbg2016.478
15. Grzega, J., & Schöner, M. (2008). The didactic model LdL (Lernen durch Lehren) as a way of preparing students for communication in a knowledge society. Journal of Education for Teaching: International research and pedagogy, 34(3), 167-175. http://dx.doi.org/10.1080/02607470802212157
16. Margret Ruep(1999): *Schule als Lernende Organisation - ein lebendiger Organismus*, in: Margret Ruep (Hg.)(1999): *Innere Schulentwicklung - Theoretische Grundlagen und praktische Beispiele*. Donauwörth: Auer Verlag, S.17-81, insbesondere 32ff.
17. Andreas Nieweler (Hrsg.)(2006): *Fachdidaktik Französisch - Tradition|Innovation|Praxis*. Stuttgart: Klett, 2006. S.318
18. Guido Öbel: *Lernen durch Lehren (LdL) im DaF-Unterricht. Eine „echte" Alternative zum traditionellen Frontalunterricht*. In: Petra Balmus/Guido Oebel/Rudolf Reinelt (Hg.) *Herausforderung und Chance. Krisenbewältigung im Fach Deutsch als Fremdsprache in Japan*. 2005· ISBN 978-3-89129-404-8
19. Alina Rachimova (2007): *Multimedia in der Ausbildung*. 2007
20. Daniel Greenberg: *Age Mixing, Free at Last - The Sudbury Valley School (https://sudval.powweb.com/bookstore/toc/free_01.html). 1987 ISBN 1888947004, (pg. 75-80)*

Bibliography

- Alan Gartner, Mary Conway Kohler, Frank Riessman: *Children teach children. Learning by teaching*. Harper & Row, New York u.a. 1971, ISBN 0-06-013553-0.
- Rudolf Krüger: *Projekt „Lernen durch Lehren". Schüler als Tutoren von Mitschülern*. Klinkhardt, Bad Heilbrunn/Obb. 1975, ISBN 3-7815-0243-0.
- Jean-Pol Martin: *Zum Aufbau didaktischer Teilkompetenzen beim Schüler. Fremdsprachenunterricht auf der lerntheoretischen Basis des Informationsverarbeitungsansatzes*. Narr Verlag, Tübingen 1985, ISBN 3-87808-435-8. (zugl. Dissertation, Universität Gießen 1985)
- Jean-Pol Martin: *Vorschlag eines anthropologisch begründeten Curriculums für den Fremdsprachenunterricht*. Narr Verlag, Tübingen 1994, ISBN 3-8233-4373-4. (zugl. Habilitations-Schrift, Universität Eichstätt 1992)
- Jean-Pol Martin, Guido Oebel (2007): *Lernen durch Lehren: Paradigmenwechsel in der Didaktik?*, In: *Deutschunterricht in Japan*, 12, 2007, 4-21 (Zeitschrift des Japanischen Lehrerverbandes, ISSN 1342-6575)
- Guido Oebel: *Lernen durch Lehren (LdL) im DaF-Unterricht. Eine „echte" Alternative zum traditionellen Frontalunterricht*. In: Petra Balmus, Guido Oebel u. Rudolf Reinelt (Hrsg.): *Herausforderung und Chance. Krisenbewältigung im Fach Deutsch als Fremdsprache in Japan*. Iudicium, München 2005, ISBN 3-89129-404-2. (Kongressdokument der DaF-Werkstatt Westjapan,

2003: Beiträge zur DaF-Werkstatt Westjapan, Ryukyu-Universität, Okinawa, Japan, 12. - 14. Dezember 2003)

- Guido Oebel (Hg.): *LdL - Lernen durch Lehren goes global: Paradigmenwechsel in der Fremdsprachendidaktik und kulturspezifische Lerntraditionen.* ISBN 978-3-8300-4096-5, Verlag Dr. Kovac, Hamburg 2009 (=LINGUA Fremdsprachenunterricht in Forschung und Praxis 16)
- Christine Schelhaas: *„Lernen durch Lehren" für einen produktions- und handlungsorientierten Fremdsprachenunterricht. Ein praktischer Leitfaden mit zahlreichen kreativen Unterrichtsideen und reichhaltiger Materialauswahl.* 2., verb. Aufl., Tectum-Verlag, Marburg 2003, ISBN 3-8288-8548-9.

External links

- Learning by teaching - by Jody Skinner (http://www.developingteachers.com/articles_tchtraining/koblenz1_jody.htm)
- Students teach literature (LdL) by Rosmarie Frick - 2005 (http://www.hltmag.co.uk/sep05/sart04.htm)

Categories: Applied learning | Educational psychology | Alternative education | Progressivism | Educational practices | Learning methods

---